

Work Order ID 47884

July 1, 2009 1:41:06 PM



Page 1

Item ID: D412-742-043

Accept



Setup Start



Revision ID: H

Item Name: Replacement Float Skidtube

Stop



Start Date: 07/15/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 08/03/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw Plan
Rev. Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3391

Rev H

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

If D412-742-043 is a W/O on it's own, Photocopy bluefile and create labels per PPP D412-742-043 CHG004

N/A

Ph
on First Page
on old w/o

110

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Spray inside tube of D3391-021/-023/-025 with LPS-3 as per Dwg D3391 11A/RLPS-3 12-Install tubes together and seal them all the way around using Sikaflex 241/291. Ensure tube ends line-up with saddle holes for proper alignment. using 7/16" "T

=> M

09-08-12

(X)

120

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

2) 8 07/08/10

(X)

X

Work Order ID 47884

July 1, 2009 1:41:06 PM



Page 2

Item ID: D412-742-043

Accept



Setup Start



Revision ID: H

Item Name: Replacement Float Skidtube

Stop



Start Date: 07/15/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 08/03/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

0.00



Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D412-742-043 Location: _____ PPP Rev: _____

PPP

5/4/4

9/9/1

54

⑩

140

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/09/09

MF

09-09-09

Picklist Print

July 1, 2009 1:41:05 PM

Page 4

Work Order ID: 47884

Parent Item: D412-742-043RevH

Parent Item Name: Replacement Float Skidtube



Comments:

Start Date: 07/15/2009



Required Date: 08/03/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ D3564-3RevD  Wearshoe		Manufactured	No				Each	14.0000	1.0000 			

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
OFFSHORE		
FG	2	
33764	2	
Main Warehouse		
ST	12	
46445	1	
46652	11	

✓ D3564-5RevD  Wearshoe		Manufactured	No				Each	13.0000	1.0000 			
--	--	--------------	----	--	--	--	------	---------	---	--	--	--

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
OFFSHORE		
FG	2	
34806	2	
Main Warehouse		
ST	11	
45824	1	
47433	1	
48164	9	

July 1, 2009 1:41:05 PM

Shop Packet Print

Page 4

Picklist Print

July 1, 2009 1:41:05 PM

Page 5

Work Order ID: 47884

Parent Item: D412-742-043RevH

Parent Item Name: Replacement Float Skidtube



Start Date: 07/15/2009

Required Date: 08/03/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ D3566-1RevC		Manufactured	No				Each	15.0000	2.0000			
												
Gasket												

Warehouse Loc Qty Loc Code
Location



Main Warehouse

ST 15

46349 1

47434 2

48165 12

✓ D3566-5RevC		Manufactured	No				Each	25.0000	1.0000			
												
Gasket												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 25

36113 1

46186 1

47318 1

48167 22

July 1, 2009 1:41:05 PM

Shop Packet Print

Page 5

Date: Monday, 11/05/2009 1:40:27 PM
 User: Julie Dawson

Process Sheet

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	FLOAT SKID ASSEMBLY
Job Number :	47884		
Estimate Number :	10756		
P.O. Number :		Part Number :	D412742043
This Issue :	11/05/2009	S.O. No. :	
Prsht Rev. :	NC	Drawing Number :	D3391 REV.H
First Issue :	//	Project Number :	N/A
Previous Run :	47883	Drawing Revision :	H
	Type :	Material :	
	SKIDTUBES	Due Date :	03/06/2009
Written By :		Qty:	1 Um: Each
Checked & Approved By :	<u>JULIE DAWSON</u>		
Comment :	Est Rev A 05.10.13 New Issue KJ/JLM Est Rev B 06.02.13 ECN 773 dwg @ rev.D EC Est Rev:C 07-05-28 As per Rev F JLM Est Rev:D 07-12-04 ECN 1072 DD verified by:JLM Est Rev:E 08-09-08 ecn 08-510 DD verified by:EC Est Rev:F 09-02-24 add D3591-1 DD Est Rev:G 09-03-30 remove D3591-1 DD verifeid by:EC		

Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description :

1.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

If D412-742-043 is a W/O on it's own,

Photocopy bluefile and create labels per PPP D412-742-043 CHG004

N/A

2.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Pb

Comment: HAND FINISHING RESOURCE #1

1-Spray inside tube of D3391-021/-023/-025 with LPS-3 as per Dwg D3391

A/R LPS-3 N/A

2-Install tubes together and seal them all the way around using Sikaflex 241/291. Ensure tube ends line-up with saddle holes for proper alignment. using 7/16" "T" Pins.

A/R Sikaflex-241/-291 M112391Expiry date: 10/20

3-Install wearplates as per Dwg D3391. Ensure that plastic washers are against wearplate, then topped with the SS washer. Coat bolts with LPS "procyon".

Seal all bolts with sikaflex exept ones with inserts on inside of tube ,hand tighten only bolts with no sikaflex.

A/R LPS Procyon M104251A/R Sikaflex-241/-291 M112391Expiry date: 10/20

4-Remove "T" pins once sikaflex is dry.

Handwritten signatures and dates: 09.08.02, 12.01.02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D412-742-043 PAR #: Fault Category: Excess. Machined parts NCR: Yes No DQA: Date: 05.05.16
 Resolution: Accepted ^{Re-work} Disposition: USE AS IS QA: N/C Closed Date: 05.05.16

NCR: <u>47884</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
05.08.11	2	Some saddle holes don't align during assembly, $\approx 0.015"$ OFF Incorrect origin + install of R.C. operator error.	<u>CP</u> 05.08.11 P Q51042	OK to file inner hole to allow install of bushings	<u>CP</u> 05.08.11 P Q51042	<u>CP</u> 05.08.11 P Q51042	<u>CP</u> 05.08.11 P Q51042	<u>S</u> 02/08/14

NOTE: Date & initial all entries

Date: Monday, 11/05/2009 1:40:28 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FLOAT SKID ASSEMBLY

Job Number: 47884

Part Number: D412742043

Job Number:



Seq. #:

Machine Or Operation:

Description :

5-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser.

3.0

D3391021

Fwd Tube Assembly



already pulled



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Fwd Tube Assembly

batch:

47307

47305

on 48086 D3391-023

4.0

D3391023

Mid Tube Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

pick:

Qty Part Number Description

Batch

1 D3391-023 Mid Tube Assembly

48005

48086

all

5.0

D3391025

Aft Tube Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

pick:

Qty Part Number Description

Batch

1 D3391-025 Aft Tube Assembly

33846

all

6.0

D35641

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARSHOE

Batch: B48163

all

7.0

D35661

Gasket



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

GASKET

Batch: B48557

all

8.0

D35643

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARSHOE

B50364

all

09-08-11

(X)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 11/05/2009 1:40:28 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FLOAT SKID ASSEMBLY

Job Number: 47884

Part Number: D412742043

Job Number:



Seq. #:

Machine Or Operation:

Description :

9.0

✓ D35645

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARSHOE B48555

41

10.0

✓ D35665

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

Batch: B48167

41

11.0

✓ AN3C4A

BOLT



Comment: Qty.: 24.0000 Each(s)/Unit Total : 24.0000 Each(s)

BOLT

Batch: M112314

41

12.0

✓ AN3C6A

BOLT



Comment: Qty.: 12.0000 Each(s)/Unit Total : 12.0000 Each(s)

BOLT

Batch: M110372

41

13.0

✓ AN3C7A

BOLT



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

BOLT

Batch: M1107376

41

14.0

✓ AN960C10L

washer



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

washer

Batch: M112116

41

15.0

✓ QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 11/05/2009 1:40:28 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FLOAT SKID ASSEMBLY

Job Number: 47884

Part Number: D412742043

Job Number:



Seq. #:

Machine Or Operation:

Description :

16.0



PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D412-742-043

Location: _____

PPP Rev: _____

17.0



QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



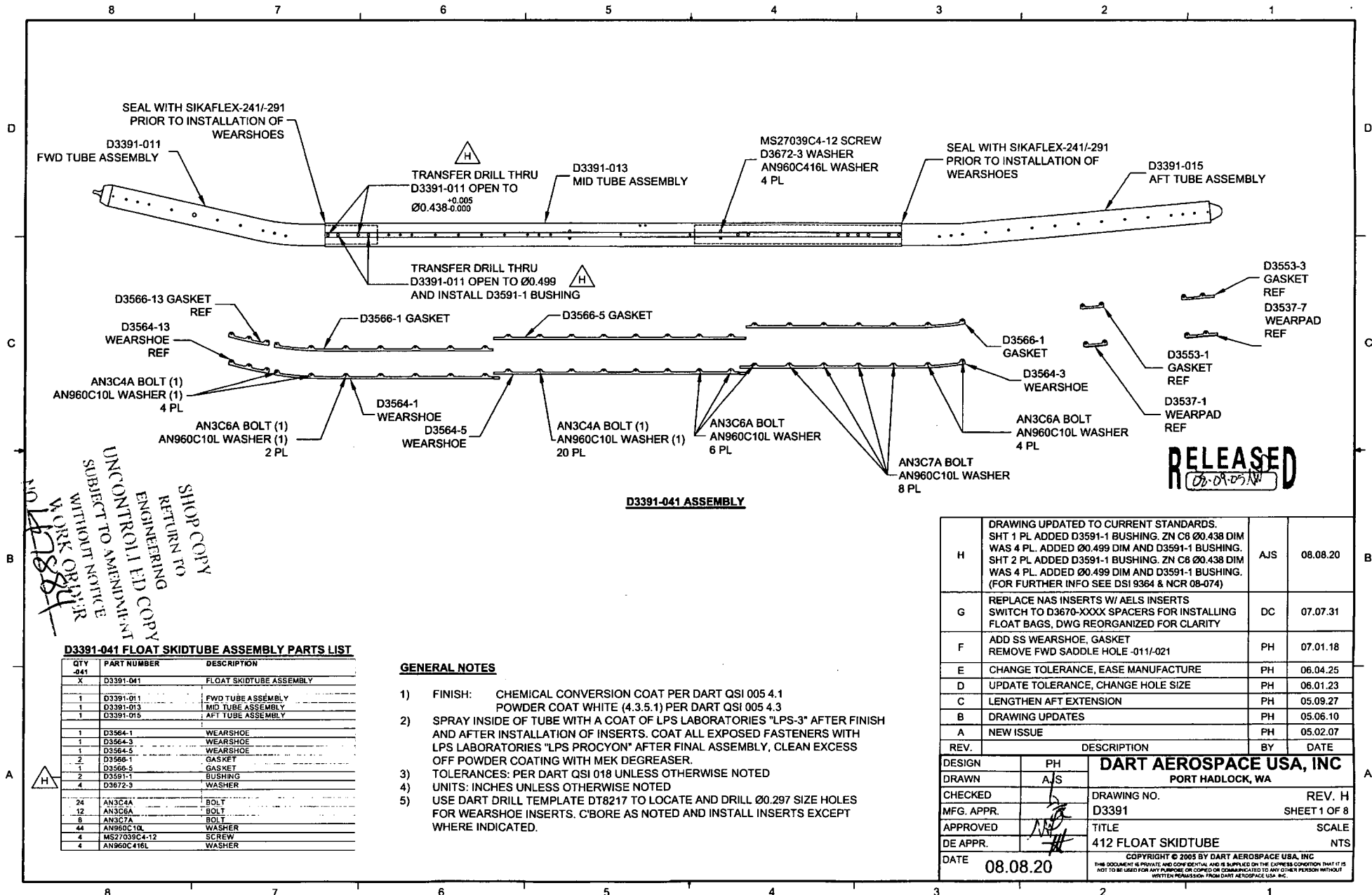
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



NO 14-1884
 WORK ORDER
 SUBJECT TO AMENDMENT
 UNCONTROLLED COPY
 RETURN TO
 SHOP COPY
 ENGINEERING

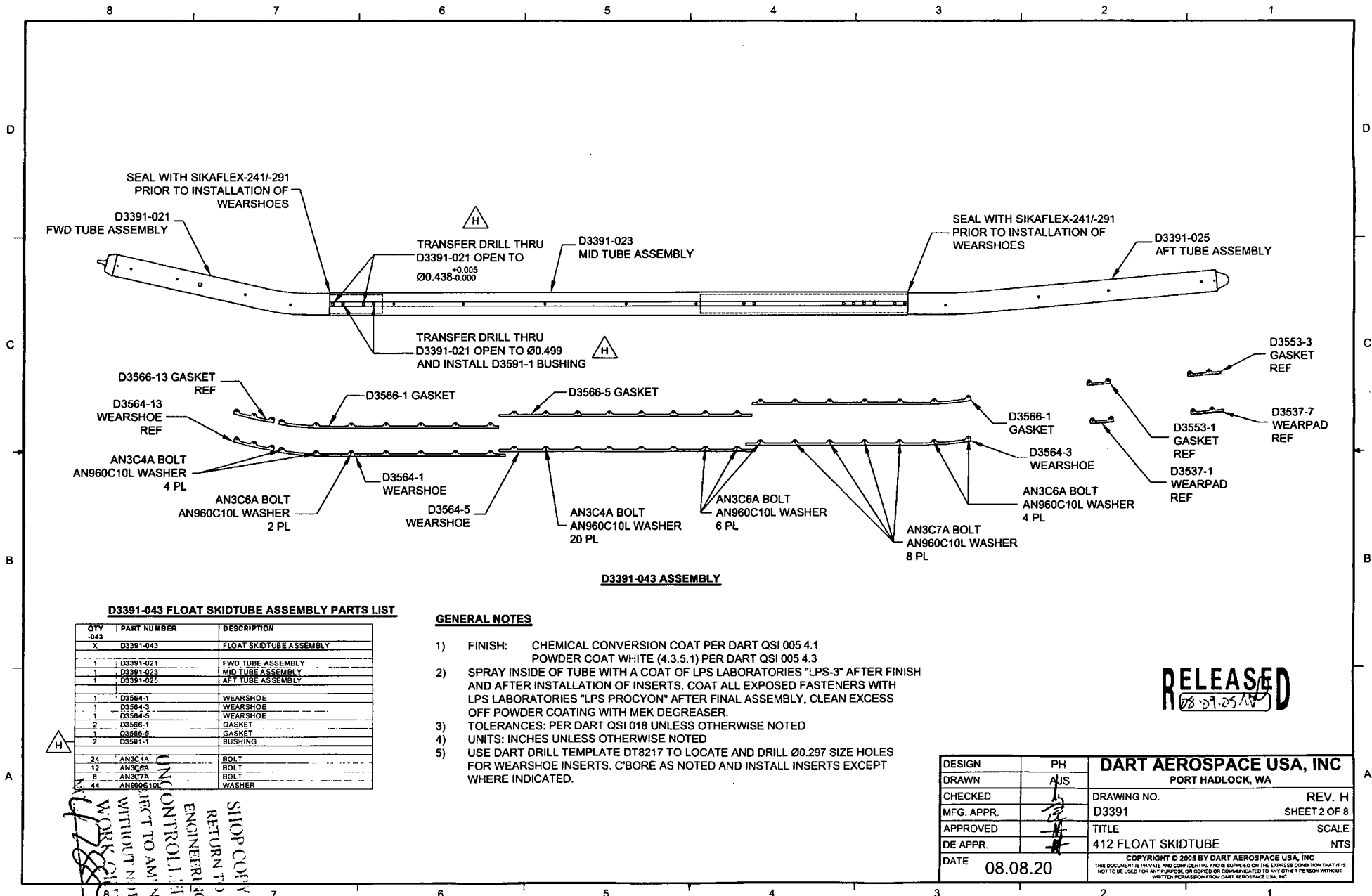
D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

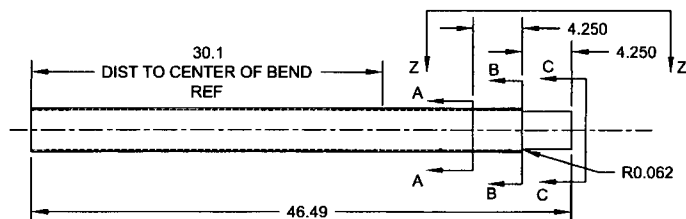
QTY	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
2	D3566-5	GASKET
2	D3566-13	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

GENERAL NOTES

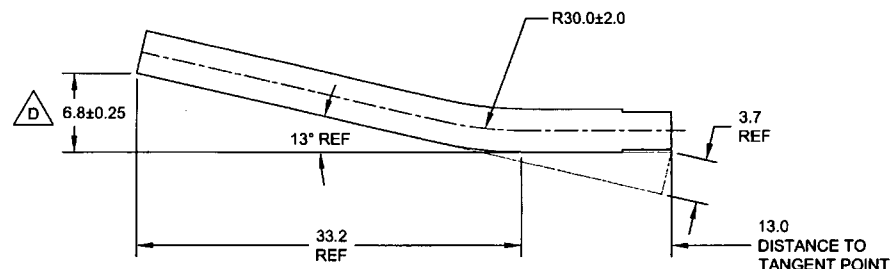
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT
WHERE INDICATED.

H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C8 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C8 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

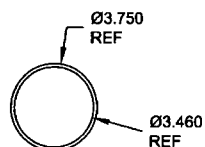




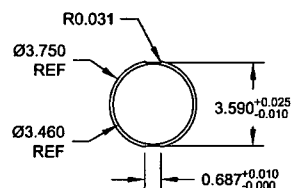
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



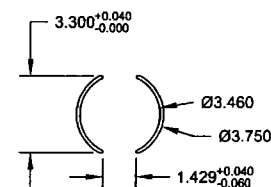
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



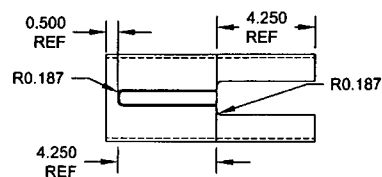
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X

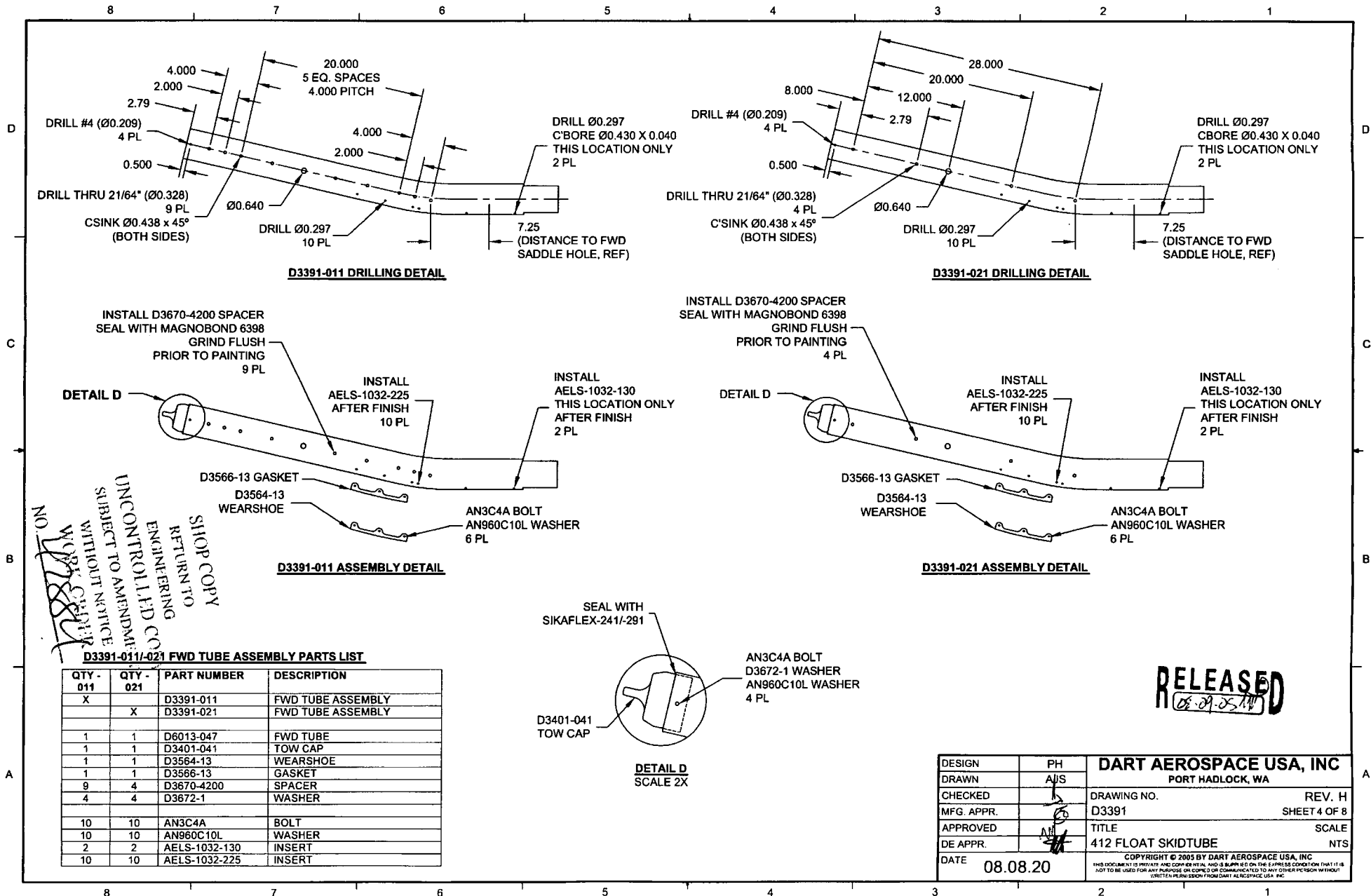


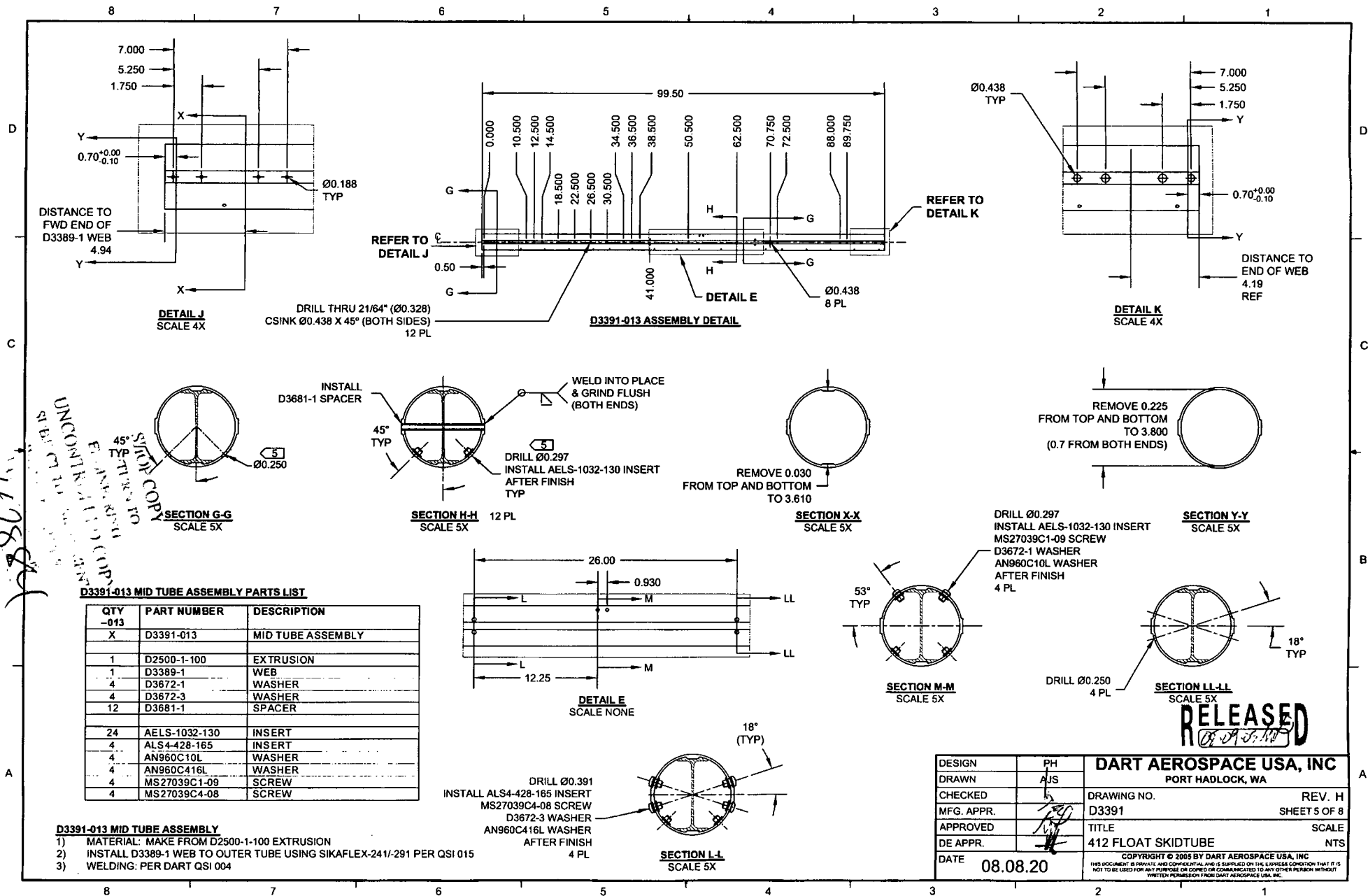
VIEW Z-Z
SCALE 2X

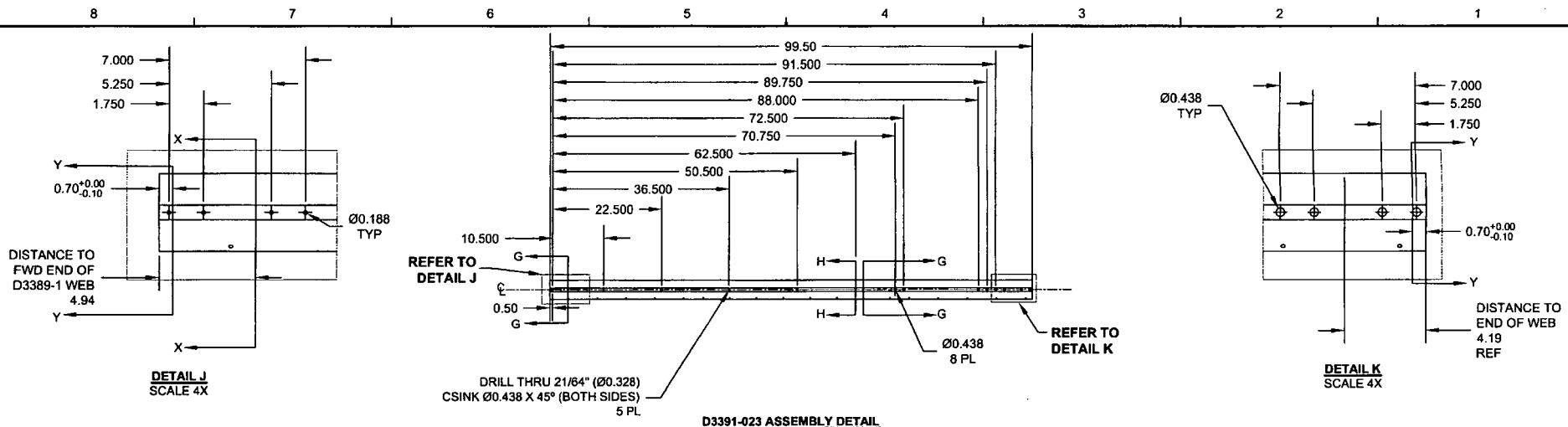
RELEASED
28 JAN 84

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO. D3391	REV. H
MFG. APPR.		SHEET 3 OF 8	
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	<small>COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC</small>	

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WITHOUT NOTICE
WORK ORDER NO. 22284







DETAIL J
SCALE 4X

DETAIL K
SCALE 4X

D3391-023 ASSEMBLY DETAIL

SECTION G-G
SCALE 5X

SECTION H-H
SCALE 5X

SECTION X-X
SCALE 5X

SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

REMOVE 0.225
FROM TOP AND BOTTOM
TO 3.800
(0.7 FROM BOTH ENDS)

RELEASED
08-29-05-14

DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA	
DRAWN	AS		
CHECKED	h	DRAWING NO. D3391	REV. H SHEET 6 OF 8
MFG. APPR.	CF	TITLE 412 FLOAT SKIDTUBE	SCALE NTS
APPROVED	CF	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS FURNISHED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	
DE APPR.	CF		
DATE	08.08.20		

